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UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF ENTOMOLOGY AND PLANT INDUSTRY.

Peach Pest Laboratory,  
Fort Valley, Georgia.

1926.

SPRAY SCHEDULE FOR GEORGIA PEACHES.

FIRST APPLICATION.

When 75% of the petals (pink part of flower) have fallen: : One pound powdered arsenate of lead, plus milk of lime made from three pounds of stone lime, to each 50 gallons of water.

SECOND APPLICATION.

When calyces or "shucks" are shedding, or when small peaches are exposed: : One pound powdered arsenate of lead, plus milk of lime made from three pounds of stone lime, to each 50 gallons of water.

THIRD APPLICATION.

Two weeks after the second application, or about four weeks after the petals have been shed: : Self-boiled lime-sulphur, 8-8-50, alone. (No arsenate of lead in this application).

FOURTH APPLICATION.

Four weeks before each variety is due to ripen: : One pound powdered arsenate of lead to each 50 gallons of 8-8-50 self-boiled lime-sulphur.

EARLY VARIETIES: These should be sprayed three times. Use the materials recommended for the 1st, 2nd, and 4th applications above, applying them at the time as noted above. For added protection against brown rot, self-boiled lime-sulphur should also be used in the second application on the early varieties.

DIRECTIONS FOR PREPARING THE SPRAY MATERIALS.

The 8-8-50 self-boiled lime-sulphur called for in the spraying schedule is made as follows:

Place 8 pounds of unslaked or stone lime in a 50 gallon barrel, and pour over it enough water, preferably warm, to start the slaking. As the slaking starts, add 8 pounds of sulphur. Add water from time to time to keep the mixture from becoming dry, but care should be exercised not to drown the lime, which would cause the slaking process to stop too soon. After the mixture has boiled some five minutes, cool off with water, strain into the spray tank, and dilute with water to make 50 gallons. The mixture should be cooled off before the red streaks occur in the mixture to any extent, which is an indication of overheating. Avoid underheating, however. Better results will be obtained by crushing all lumps of sulphur and mixing it with a little water before adding to the slaking lime.

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The above formula may be raised to 16-16-100 or 32-32-200. A large container should be used, however, in preparing self-boiled lime-sulphur with these formulae. Stock solutions can of course be made up, observing the proportions given.

The powdered arsenate of lead, which is used in the proportion of 1 pound to 50 gallons of the spray solution, should first be made into a thin paste with water before adding to the spray tank.

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#### DUSTING SCHEDULE FOR GEORGIA PEACHES.

##### FIRST APPLICATION.

When 75% of the petals (pink part of flower) have fallen:	:	Arsenate of lead 5%; lime 95%. *
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##### SECOND APPLICATION.

When calyces or "shucks" are shedding, or when small peaches are exposed:	:	Arsenate of lead 5%; lime 95%. *
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##### THIRD APPLICATION.

Two weeks after the second application, or about four weeks after the petals have been shed.	:	Sulphur 80%; arsenate of lead 5%; lime 15%.
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##### FOURTH APPLICATION.

Four weeks before each variety is due to ripen:	:	Sulphur 80%; arsenate of lead 5%; lime 15%.
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EARLY VARIETIES: Early varieties need only three dust applications, using the formula containing arsenate of lead and lime at the time indicated for the 1st dusting above, and the formula containing sulphur at the time indicated for the 2nd and 4th dustings above.

\* It is not necessary to use sulphur in the first two applications, although the regular formula (80-5-15) may be used if desired.

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations

which are satisfied by the functions  $u_i(x, y, z)$  and  $v_i(x, y, z)$  in the domain  $D$ .

2. In the second part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be continuous in the domain  $D$ .

3. In the third part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be differentiable in the domain  $D$ .

4. In the fourth part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be twice differentiable in the domain  $D$ .

5. In the fifth part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be three times differentiable in the domain  $D$ .

6. In the sixth part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be four times differentiable in the domain  $D$ .

7. In the seventh part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be five times differentiable in the domain  $D$ .

8. In the eighth part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be six times differentiable in the domain  $D$ .

9. In the ninth part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be seven times differentiable in the domain  $D$ .

10. In the tenth part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be eight times differentiable in the domain  $D$ .

11. In the eleventh part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be nine times differentiable in the domain  $D$ .

12. In the twelfth part we consider the case when the functions  $u_i$  and  $v_i$  are assumed to be ten times differentiable in the domain  $D$ .